

WHAT IS CLAIMED IS:

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1. A method for manufacturing a semiconductor package, said method comprising:

5 providing a wafer including one or more semiconductor chips, each chip having one or more mirrors formed thereon, a plurality of bond pads formed on a periphery of the chip;
forming a photoresist over the one or more mirrors;
singulating the one or more semiconductor chips from the wafer;
mounting the one or more semiconductor chip on a top surface of a base substrate;
10 electrically interconnecting the bond pads of the semiconductor chip to the base substrate; and
removing the photoresist from the semiconductor chips.

15 2. The method of claim 1, wherein said singulating comprises full-cutting the wafer.

3. The method of claim 1, after said forming the photoresist, further comprising:
forming a metallic layer over a back surface of the wafer,
wherein said mounting is performed using a metallic adhesive.

20 4. The method of claim 1, further comprising:
hermetically sealing each attached semiconductor chip on the upper surface of the base substrate.

25 5. A method for manufacturing digital micro-mirror device (DMD) packages, said method comprising:

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30 providing a wafer including a plurality of DMD semiconductor chips, each chip having one or more mirrors formed on substantially the center of an active surface of the chip, a plurality of electrode pads formed on the periphery of the active surface;
forming a photoresist over the mirrors;
forming a metallic layer on a back surface of the wafer;
separating the wafer into the individual semiconductor chips;
mounting each semiconductor chip on an upper surface of a base substrate;

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interconnecting the electrode pads of the semiconductor chip to the base substrate with one or more bonding wires;

removing the photoresist from the semiconductor chips;

forming an anti-sticking film on the active surface of the semiconductor chip for
5 protecting the semiconductor chips from dust and moisture; and

hermetically sealing the semiconductor chip and the bonding wires on the upper surface of the base substrate.

6. The method of claim 5, wherein the metallic layer is made of a metal having a
10 low melting point, said metal being selected from the group consisting of Va, Au, Ni, Ag, Cu, Al, Pb, Sn, Sb, Pd and metal-containing compounds thereof.

7. The method of claim 5, wherein the base substrate is selected from the group consisting of a ceramic board, a plastic board and a printed circuit board.
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8. The method of claim 5, wherein said forming a metallic layer comprises lapping the back surface of the wafer and forming the metallic layer made of a metal having a low melting point on the back surface.

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9. The method of claim 5, wherein said metal adhesive is solder.

10. The method of claim 5, wherein said hermetically sealing of the semiconductor chip and the bonding wires comprises providing a metal sealing ring to the base substrate on a periphery of the base substrate and hermetically sealing the
25 semiconductor chip and the bonding wires by attaching a window lid to the upper surface of the metal sealing ring, and wherein a distance between the upper surface of the base substrate and the lower surface of the window lid is greater than the height of the one or more bonding wires.

30 11. The method of claim 10, wherein said window lid comprises a metal lid frame in contact with the metal sealing ring, a window perforating the metal lid frame generally in the center of said window lid, a reflectance coating film formed on the lower surface of the window on a periphery thereof, and a moisture getter attached to lower surface of the metal lid frame.

12. The method of claim 5, after said hermetically sealing the semiconductor chip and the one or more bonding wires, which further comprises attaching a heat sink stud to the lower surface of the base substrate.

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13. The method of claim 1, wherein said hermetically sealing the semiconductor chip and the bonding wires is performed at a predetermined temperature, said predetermined temperature being not higher than the temperature on which said attaching the semiconductor chip to the base substrate is performed.

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14. A digital micro-mirror device (DMD) packages, comprising:
a base substrate having a top surface and a bottom surface;
a metallic layer formed on the top surface of the base substrate;
a metallic adhesive formed on the metallic layer;
a semiconductor chip mounted on the metallic adhesive, the base substrate electrically connected with the semiconductor chip;
one or more mirrors mounted on the semiconductor chip;
a hermetic sealing means covering the semiconductor chip including the one more mirrors.

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15. The DMD package of claim 14, which further comprises a heat sink attached on the bottom surface of the base substrate.

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